

VGEN-G Green Fiber Lasers

High Repetition Rate With Tunable Short Pulse Width For Fine Materials Processing



Spectra Physics' VGEN-G series of pulsed green fiber lasers (532 nm) incorporate cutting-edge technology to provide top performance for precision-intensive applications such as solar cell, micro-machining, silicon scribing, fine processing, thin film cutting and more. The VGEN-G lasers are comprised of short-pulse, linearly polarized Ytterbium fiber lasers in MOPA configuration along with SHG (second harmonic generation) module, providing an output power of up to 30 W.

VGEN-G lasers offer a high pulse repetition rate (up to 1.5 MHz) combined with a very short pulse (tunable down to 3 ns) and high peak power which enable high system throughput for maximum operation efficiency.

Housed in a robust assembly that meets industrial standards and fitted with metal armored fiber cable, the VGEN-G delivers a high quality, near-diffraction-limited output beam.

The VGEN-G Advantage

- Up to 30 W average output power
- 3–50 ns (preset values) pulse width
- Single Shot – 1500 kHz (tunable) repetition rate
- Up to 180 μ J pulse energy
- High beam quality ($M^2 < 1.2$)
- Complies with the industry standard (RS-232 and TTL interfaces)
- Air cooled

Applications

- Solar cell, silicon scribing and processing
- Marking
- Fine materials processing
- Micro machining
- Scribing
- Thin film cutting
- Gold and copper processing
- Medical
- Entertainment and display
- Security and defense



VGEN-G Green Fiber Lasers Specifications^{1, 3}

	VGEN-G-10	VGEN-G-20	VGEN-G-HE-10	VGEN-G-HE-20	VGEN-G-HE-30
Wavelength	532 nm				
Average Output Power	10 W	20 W	10 W	20 W	30 W
Repetition Rate	Single shot to 600 kHz	Single shot to 1200 kHz	Single shot to 600 kHz	Single shot to 1200 kHz	Single shot to 1500 kHz
Pulse Width	3–20 ns (preset values)		3–50 ns (preset values)		
Pulse Energy (Max)	100 µJ		180 µJ		
Peak Power	10 kW				
Pulse to Pulse Energy Instability ²	<2% RMS @ 250 kHz				
Polarization	Vertical				

General Characteristics

Operational Voltage	24 VDC				
Operating Temperature	10–35°C				
Laser Dimensions	105 x 195 x 283.14 mm				130 x 210 x 299 mm
Output Head Dimensions	98.7 x 116.5 x 298.7 mm				135 x 145 x 283.7 mm
Laser Unit Weight	6 kg				6.5 kg
Conversion Head Weight	4 kg				4.5 kg
Fiber Length	300 cm				
Output Beam Diameter	2 ±0.3 mm				3 ±0.5 mm (Typical 2.8 mm)
Output Beam Parameters	M ² <1.2				

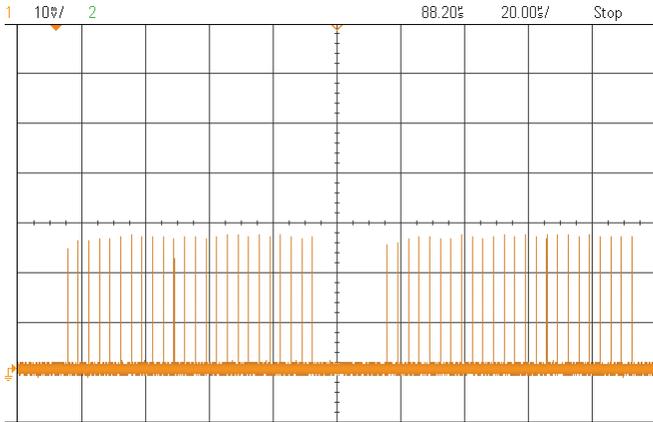
1. Due to our continuous improvement, all specifications are subject to change without notice.

2. After 1 hour warmup.

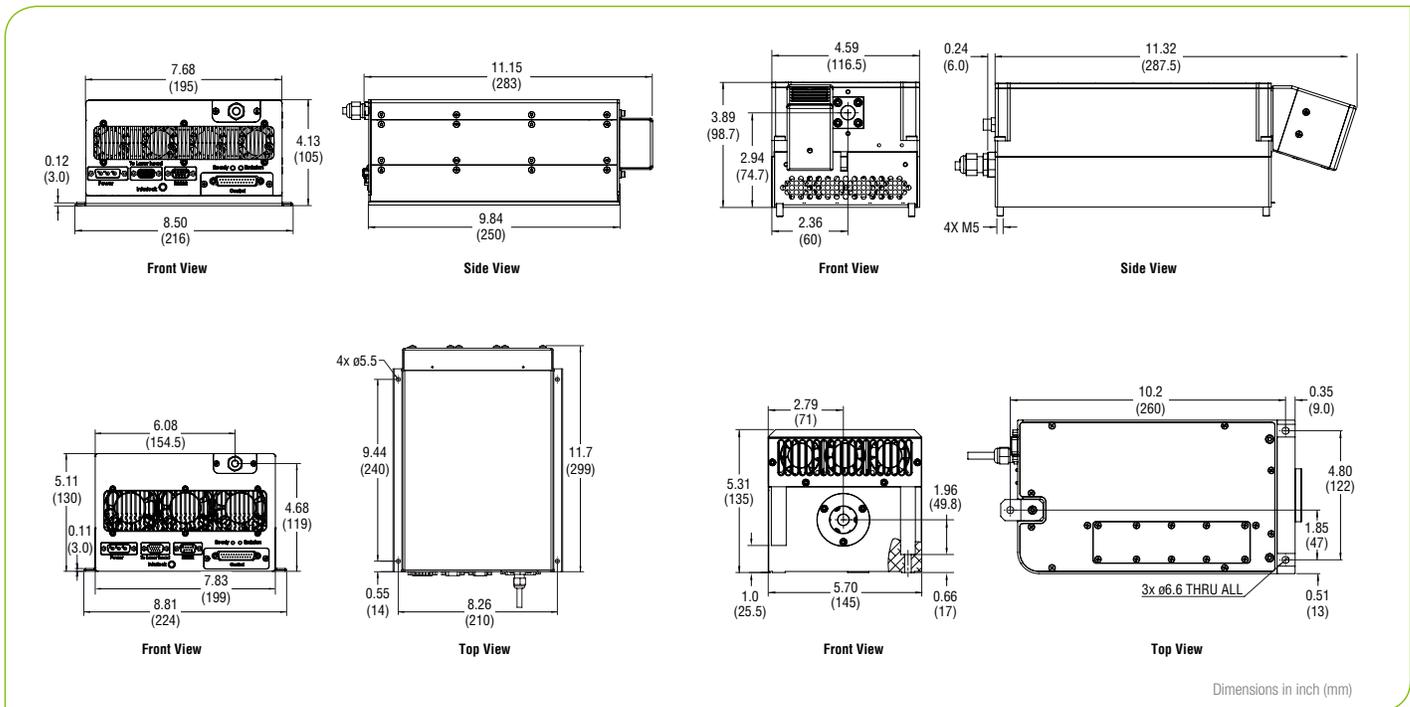
3. VGEN-G is a Class IV -- High Power Laser, whose beam is, by definition, a safety and fire hazard. Take precautions to prevent exposure to the direct and reflected beams. Diffuse as well as specular reflections can cause severe skin or eye damage.

VGEN-G Green Fiber Lasers

High Throughput Scribing (Laser Output)¹



1. Typically measured performance; not a guaranteed or warranted specification.



VGEN-G Dimensions



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